

# SIMULATORS INC.

## READ OUT

1856 WALTERS AVE., NORTHBROOK, ILLINOIS 60062 — 272-6310 AC 312

VOLUME 1, SPRING ISSUE

*To our Professional Friends:*

*It is our pleasure to send you at this time the first issue of the Simulators, Inc. Read Out. We trust that you will find it of interest.*

*Through this periodical, which will be published quarterly, we intend to establish a contact between our operations and the somewhat select professional group who find the techniques of analog or hybrid simulation a useful tool in problem solving. This first issue will cover the formation of Simulators, Inc. and our intended goals as a manufacturer of analog, and in the near future, hybrid simulation equipment. Subsequently, we will use this media for announcing new products, discussing significant techniques, test procedures and standards, outlining our approach to certain problems, and bringing to the reader's attention any interesting bit of news that is discovered in our travels.*

*We will attempt to make the Simulators Read Out worthwhile and interesting reading for any individual who cares to follow the simulation field. If you or your associates would like to be on the list to receive our periodical please return the attached card or otherwise drop us a line.*

RAY SPIESS

### FORMATION OF SIMULATORS, INC.

Simulators, Inc. began about two years ago. Chuck McVey, and a long-time friend, Howard Patterson, sat over a drink one night in New Jersey, and reviewed the somewhat incredible series of events that had led to the demise of an analog computer company. The two friends were convinced that one of the industry's bigger disasters could have been averted. There was a compelling urge to learn from the experience, so they decided to form a company.

At that time Chuck McVey had about 17 years experience with the engineering and marketing of electronic systems--the past nine years with general purpose analog and hybrid computers. He felt--since not one to suffer from a lack of confidence--that he knew what users wanted in simulation systems.

Howard Patterson knew practically nothing about computers. He is a financial man and was only amazed at the method by which analog computer manufacturers ran a business. His was a more fundamental background in business and finance, having been with such conservative institutions as the U.S. Government and the Chrysler Corp. In his opinion (a normal one to many accountants) only adhering to good financial practice would insure a successful operation in the computer business.

The question at the particular point of time was one of direction and a means to arrive at the position where one could benefit from the painfully learned mistakes. One approach was to purchase an organization established in the field, and for a while it appeared as though such an arrangement was the best course of action. (Cont. on p.2)



BOARD OF DIRECTORS CHARLES MC VEY, ALBERT PICK III, RAY SPIESS AND HOWARD PATTERSON ARE SHOWN AT THE FIRST SIMULATORS, INC. BOARD MEETING.

### BOARD OF DIRECTORS NAMED

Four of the five-man Simulators, Inc. Board of Directors have been announced. The fifth member will be named in a few weeks and will appear in the next edition of the Read Out.

The four Board members, shown in the above photograph, are as follows:

#### Mr. Charles J. McVey

Mr. Charles J. McVey, the founder of Simulators, Inc. has become president of the new organization. His experience with scientific simulation dates back some eleven years, during which time he had accumulated a highly regarded design and marketing experience. Prior to the formation of Simulators, Inc. he was associated with the marketing activities of Electronic Associates, Inc. and also served as president of Computer Associates, an organization having marketing responsibilities for Computer Products, Inc.

#### Mr. Howard Patterson

Mr. Howard Patterson, a co-founder of Simulators, Inc., assumes the responsibilities of Vice President-Controller. He brings to the organization an impressive experience in business and financing. Formerly he was supervisor of Forward Planning for Chrysler Corp. after spending six years as an Internal Revenue Agent. He was also associated with Advance Transformer Company, a Chicago based electronics firm.

#### Mr. Albert Pick III

Mr. Pick comes from one of the country's prominent families and is known for his backing of young firms of a scientific origin. In addition to other activities he is as-

(Continued on Page 4)



## FORMATION (Continued from Page 1)

Chuck McVey contacted an oldtime friend, Charlie Marsh, who was then with S.T.L. It was suggested that they join forces and purchase Control Technology, Inc. The two had worked successfully together in the past and it appeared that they could integrate Albert Jackson's organization into a profitable computer operation. Negotiations proceeded for the purchase.

Howard Patterson put the damper on that venture. By that time he was wary of all computer manufacturers and had developed a somewhat cynical viewpoint of the computer engineer's business and finance abilities. Even following a delightful dinner at Charlie Marsh's beautiful California home, Howard Patterson would have nothing to do with the purchase.

Chuck McVey was forced to agree. Furthermore, they were then convinced that they needed a hardware product, especially one that worked. To be successful they had better accurately predict trends and demands of future customers.

Having a healthy conviction that simulation was in a generally vigorous state, Chuck McVey recognized several of the trends that were available for observation and analysis. The most obvious trend was that the vacuum tube was on its way out as far as simulation equipment was concerned. Hybrid simulation and iterative techniques were gaining popularity--bringing with them the requirements for greater accuracies at high frequency operation.

However, the real clue to a future course was that users were demonstrating an acceptance for 10 volt analog computers and appeared willing to abandon the 100 volt reference systems commonly referred to as the "industry's standard." Since McVey was a 100 volt computer man with a large simulation laboratory reference, it was not easy to objectively accept the 10 volt reference system as the obvious best path for his future company.

Chuck McVey had as much prejudice for large 100 volt systems as anyone, but the facts were too clear to ignore. Transistorized analog systems could be furnished at a much less expensive design and component cost with lower voltage levels. The projections by transistor manufacturers for present and future position on linear elements showed that lower voltage level components would continue to be considerably less expensive than their 100 volt counterparts.

In addition to an estimated 30 to 40 percent cost reduction in producing a 10 volt reference transistorized analog computer design, as compared to the 100 volt system, the low impedance



WOLFGANG HOLZ, MANAGER OF THE ANALOG COMPUTER OPERATIONS OF TELEFUNKEN A.G. ENGRAVES THE TELEFUNKEN ESCUTCHEON IN THE McVEY RESIDENCE BACKYARD.

levels used in the lower voltage systems provided a fundamental advantage for high frequency operation.

Market survey results appeared to point in the direction of a one world manufacturer who had gained a distinction for pioneering transistorized analog computers. The same producer had a 10 volt reference system competitive in performance with the world's best 100 volt computers. The timing for entry into the U.S. by the German Company--Telefunken--seemed propitious.

Armed with a master plan and a method of organizing a company around a well known, field-proven product, McVey launched an attack on Germany. Since Telefunken wanted a part of the U.S. market, little resistance was assured.

One and one-half years, four trips to Germany and many pleasantries later--including evenings at the beer hall--negotiations began to bear weight. Discussions finally reached the Board of Directors of the \$800,000,000 Telefunken Division of the considerably larger Aklengesellschaft. The fourth visit gained a format for a final agreement and congratulations on reaching such a fine arrangement in such a short period of time. A contract was assured to be forthcoming.

Mr. McVey hurried home. He and Mr. Patterson took the next step by incorporating Simulators, Inc. in their home state of Illinois. However, before a final agreement could be reached, Telefunken sought to investigate its U.S. marketing facilities.

On a sunny day last August, this requirement brought Wolfgang Holz, Analog Computer Division manager; Hasso Vitz, export manager; and Telefunken's American Emissary Dr. Rudolf H. Siegert to Northbrook. An auspicious day was at hand.

Negotiations on American soil were thorough and precise with the events

climaxed at the McVey residence. There Chuck McVey introduced Messrs. Holz and Vitz to the American martini. (Dr. Siegert, having spent some five years in the U.S. knew darn well what the American martini was.) In appreciation for the introduction, Messrs. Holz and Vitz engraved the Telefunken escutcheon on the backyard lawn with the McVey powermower. The coat of arms carving all but ended the two-year long ordeal with both groups in enthusiastic agreement over the joint venture in business. The marketing contract was signed two weeks later.

Concurrent with the Telefunken negotiations, Simulators had the very good fortune of obtaining another licensing agreement, this one with the Automation Center of the McDonnell Aircraft Corp. In it Simulators was given manufacturing and marketing rights for a precision high-speed electronic switching system, developed by McDonnell to provide their hybrid systems with adequate electronic mode control.

Following an exhaustive comparison with existing manufacturers, the McDonnell people were convinced they had a breakthrough, a patent-worthy item. Perhaps remembering some of the nightmares that Chuck McVey had spent with them on electronic switching, they most kindly provided Simulators, Inc. with the proven high performance electronic switching design. That marked another auspicious day.

Now having the capabilities of tying an electronic switch designed by McDonnell to a Telefunken engineered product, Simulators had investors veritably beating a path to their door. Each showed decided interest in acquiring a piece of the organization with an initial sale of stock completed soon afterwards.

In September 1965, Simulators, Inc. began full-time operations as engineering and manufacturing personnel joined the organization. The firm's marketing department was added in October and work started on a prototype general purpose analog and hybrid computer.

Plans at this time call for a working prototype to be available for introduction of a complete line of analog computers at the Spring Joint Computer Conference in Boston. Early indications show that performance characteristics of the system will be in keeping with the McDonnell and Telefunken standards. There is a tendency to comment that the performance may be superior to anything available today, but we're just not one to brag.

However, a definite confidence prevails that performance will be such as to provide an excellent computer at a competitive price--thus gaining Simulators, Inc. at least a niche in the marketplace. And that's our past, present and future goal.



## data topics

Brookings Institution, Washington, is putting in a computer center for research in the social sciences. International Business Machines Corp. will provide a grant to help in developing the center which will be under the direction of George Sadowsky, formerly manager of Yale University's computer center.

Equipment will include a 7040 computer system which is expected to be installed next spring.

**Recognition Equipment, Inc.,** Dallas has received two orders for electronic retina character recognition readers. The Swedish Postal Bank, Stockholm, will lease a elec-

tronic retina system next month.

The firm has agreed with the bank to develop an electronic securities system for use in brokers' offices throughout the country.

### Compu

#### New

**Matrix Corp.,** ordered a GE-635 computer will be installed in the bank here, next spring.

The \$2.5 million Datatronics 30 controller which Matrix capabilities include computer input to General

#### New In

**State National Bank** at Decatur, has ordered a GE-635 computer bookkeeping system. The bank officials handle a daily 100,000 checks and transactions after the system is installed.

Computer systems are being installed in an IBM 40 computer in

### McDowell Of New H EDP Div.

**WELLESLEY F. Robert McDowell** director, computer group, Electronic division here, Hon

Mr. McDowell, company in 1961, a software (program) planning group

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## Firm to Produce, Sell Switch Under McDonnell Permit

**NORTHBROOK, Ill.** — Simulators, Inc., here, has entered into an exclusive license agreement with McDonnell Aircraft Corp. to produce and market a precision electronic switching system developed by McDonnell Automation Center.

The fledgling electronics firm, recently formed here to enter the analog simulation and computation field, plans immediate use of the electronic switch in its product line. Charles J. McVey, president of Simulators, and R. L. Harmon, general manager of the Automation Center, disclosed the agreement.

In addition to incorporating the McDonnell switch in its line of general and special purpose analog computers, and general purpose simulators, the local firm will sell the item as a component to manufacturers of analog, digital and instrumentation systems, the spokesmen said.

#### Seen Aiding Success.

"The method of switching analog signals is a critical area of high speed analog systems, such as those found in hybrid computing and data acquisition," Mr. McVey said, "and the incorporation of the switch should contribute considerably to Simulator's success in these fields."

The aircraft firm's automation center undertook the electronic switch development when it was found that demands imposed by high speed computing techniques were not being met by existing suppliers, it was said.

Such techniques are required in hybrid computation where the system used is a digital computer or device linked to a general purpose analog computer. The McDonnell switch is said to offer superior characteristics in systems where the highest possible performance is required.

Simulators expects the switch to be a major part of the \$500,000 first-year sales goal it disclosed to Electronic News earlier this year. The firm has set the first showing of its products for the Spring Joint Computer Conference in April.

## ESD Citations Mark Cost Cuts

**HANSCOM FIELD, Mass.** —  
Memories at the Air Force

## Simulators Firm Set Up to Produce Analog Devices

**NORTHBROOK, Ill.**—Simulators, Inc., has been formed here to enter the analog simulation and computation field.

Charles J. McVey, president and founder, expects sales of \$500,000 the first year. Plans are to introduce a line of general purpose simulators, also general and special purpose analog computers early next year.

The firm will assemble units around components, high speed switches and circuit parts, supplied by foreign and United States manufacturers.

Exclusive sales and manufacturing contracts with major manufacturers and users of analog computation equipment is the basis for the company's sales goals, he said. Additional details of the contracts were not disclosed.

In addition to Mr. McVey, other officers include Howard Patterson, vice-president and controller and Ray H. Spiess, vice-president of marketing.

Mr. McVey was associated with Electronic Associates, Inc., in marketing posts. Mr. Spiess, also formerly with EAI, is on the board of the Chicago Chapter of the Instrument Society of America. Mr. Patterson was supervisor of forward planning for Chrysler Corp.

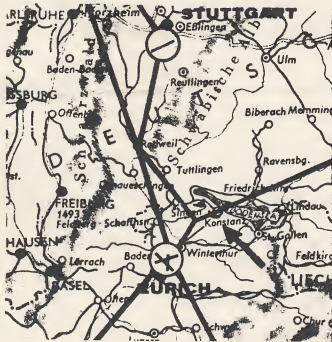
The firm has geared operations for first showing of its products in the Spring Joint Computer Conference, April, 1966.



## TELEFUNKEN BACKGROUND

The analog computer operations of Telefunken provides an excellent example for those who ascribe to the idea that happy and healthy employees put out a better product. Located in Konstanz, on the Bodensee, the site is a garden spot some 60 miles outside Zurich, Switzerland. Everywhere there is evidence of the rosy cheeks and clear eyes associated with robust mountain living are the way of life there.

Although little work is done on the first day of hunting season--or following a six-inch snowfall--somehow the solid German dedication turns out a distinguished product.



LOCATED ON THE BODENSEE, KONSTANZ OFFERS TELEFUNKEN A PICTURESCUE LOCATION FOR ANALOG COMPUTER OPERATIONS.

Telefunken entered the simulation field in 1953 with the introduction of a vacuum tube 10 volt reference analog computer, establishing the German firm as a manufacturer of precision computing equipment. It was about this time in their growth that a young PHD from Stuttgart joined the Telefunken staff.

Dr. Wolfgang Giloi brought to the firm a talent in modern control theory and a strong understanding of semiconductors, an infant science in the early 1950's. Primarily through his efforts, Telefunken developed the world's first successful transistorized general purpose analog computer.

Thus in 1956, a pioneering milestone was reached in transistorized systems with the introduction of Telefunken's model RAT700, a 10 volt reference system. Since having no real solidarity of preference for 100 volt computers, there was an absence of internal pressure to allocate the 10 volt system to second class status. They had designed the system to compete in performance with the world's most sophisticated 100 volt computers --and they did just that.

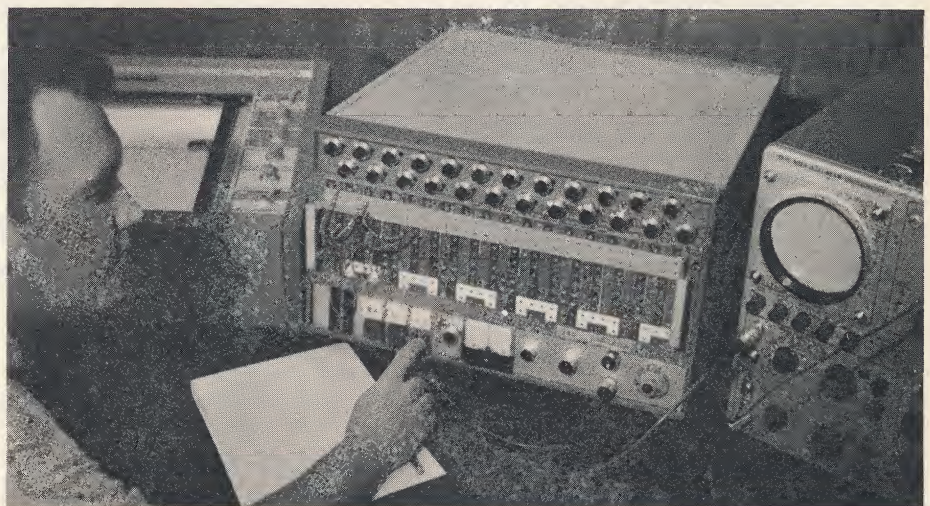
Shortly after introduction, Telefunken began a rise toward obtaining their now large majority of a competitive and difficult German market. The firm currently markets systems through three designs.

Model RA800 has been a standard in large laboratories for some years, but is now bowing to the Model RA770 -- to be introduced at the Hanover Fair this spring. Telefunken also has a small desk top computer, the Model RAT741. RAT stands for Rechner Analog Tisch, which unfortunately loses its meaning in translation. (Our public relations people are working with Telefunken to derive a better designation for the American market.)

For an engineer who appreciates analog computer hardware, the Telefunken design offers some interesting approaches to traditional problems. In the amplifier, they parallel the DC and AC amplifiers to obtain some remarkable noise and offset characteristics, enabling the use of a tricky stabilizer limiting device to actually better the optimum recovery from saturated overload.

Telefunken was first to use temperature compensated integrating capacitors and the result has been stable low integrator drift characteristics. The mechanical designs are superb and they have undoubtedly the world's finest servo set pot system and servo multiplier. Telefunken has accumulated since 1952 a wide line of computing networks. In fact, it is the widest line of 10 volt reference analog computing components in the world.

In their organization are many wonderful people, and we are indeed honored to have an association with them. They combine a joie de vivre with a professional approach to difficult problems and the result is delightful. Their facilities are excellent and worthwhile seeing. If and reader plans to be in Germany, he should by all means stop in and see the Telefunken operations. We guarantee that the hospitality is second to none.



RAY SPIESS DEMONSTRATES THE FIRST COMPUTER PROTOTYPE. THE MODEL 240 SIMULATOR SHOWN ABOVE IS A PART OF THE LINE OF COMPUTERS THAT WILL BE INTRODUCED AT THE SPRING JOINT COMPUTER CONFERENCE IN BOSTON THIS YEAR.

## BOARD NAMED (Cont. from Page 1)

sociated with Orvis Brothers & Co., a NYSE firm. Mr. Pick is a principal stock holder in Simulators, Inc. and has assisted in selling the initial stock issue.

### Mr. Ray H. Spiess

Mr. Spiess joins Simulators, Inc. as Vice President-Marketing. Formerly he was with Electronic Associates, Inc. responsible for sales and marketing activities in their central regional office. He is on the Board of Governors of the Chicago Section of the Instrument Society of America.

## NEW LITERATURE AVAILABLE

A few data sheets covering the Simulators, Inc. Series 120 Advanced Electronic Simulation Systems are now available. We will be happy to send on request copies of the following:

Type 1.500 Chopper stabilized operational Amplifier

Type 3.110 Quarter-Square Multiplier.

Type 2.230 EMC Integrator Network.

Also a preview of the two desk top Simulators to be announced in Boston

Model 240 Simulator

Model 480 Simulator

Available within a few weeks will be:

12 PAK Sub-System

Series 120 Advanced Electronic Simulation System Brochure

Please write or call Simulators, Inc. 1856 Walters Avenue, Northbrook, Illinois, 60062, Area Code 312, 272-6310.